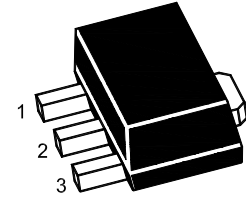


Plastic-Encapsulate Transistors

NPN Silicon Transistor

The 2SD1616U / 2SD1616AU are designed for use in driver and output stages of AF amplifier general purpose application.



1.Base 2.Collector 3.Emitter
SOT-89 Plastic Package

The transistor is subdivided into three groups R, O and Y, according to its DC current gain

FEATURES

- Low collector saturation voltage
- High break down voltage
- High total power dissipation

MARKING: 2SD1616U:1616
2SD1616AU:1616A

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Value	Unit	
Collector Base Voltage	V_{CBO}	2SD1616U	60	V
		2SD1616AU	120	
Collector Emitter Voltage	V_{CEO}	2SD1616U	50	V
		2SD1616AU	60	
Emitter Base Voltage	V_{EBO}	6	V	
Collector Current (DC)	I_C	1	A	
Collector Current (pulse) ¹⁾	I_C	2	A	
Power Dissipation	P_{tot}	0.5	W	
Junction Temperature	T_j	150	$^\circ\text{C}$	
Storage Temperature Range	T_s	-55 to +150	$^\circ\text{C}$	

1) $PW \leq 10\text{ms}$, Duty Cycle $\leq 50\%$



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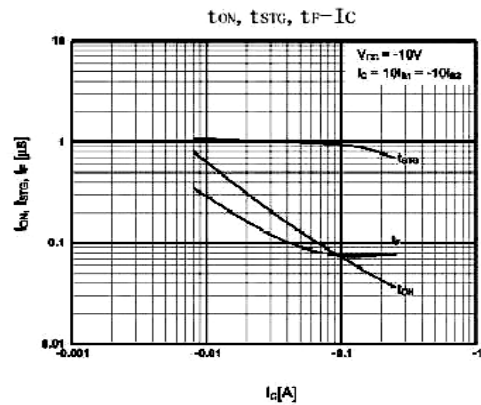
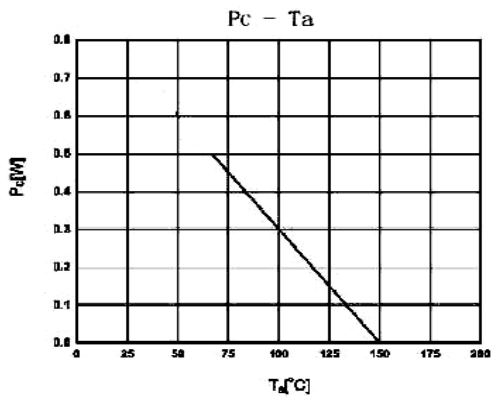
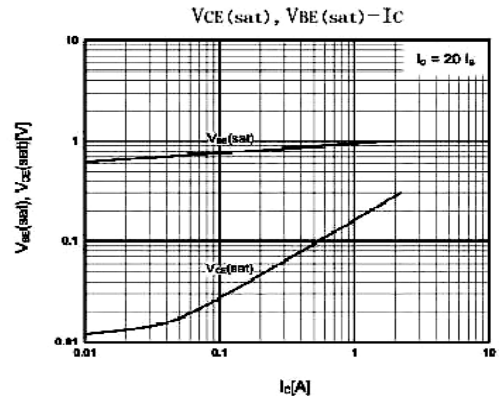
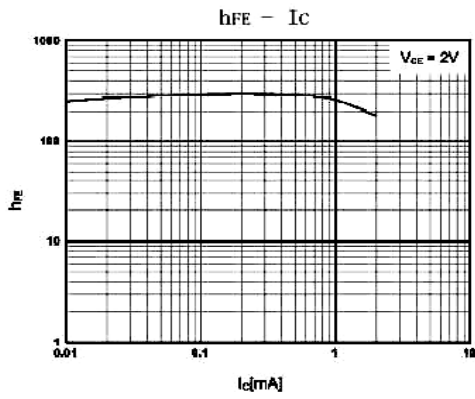
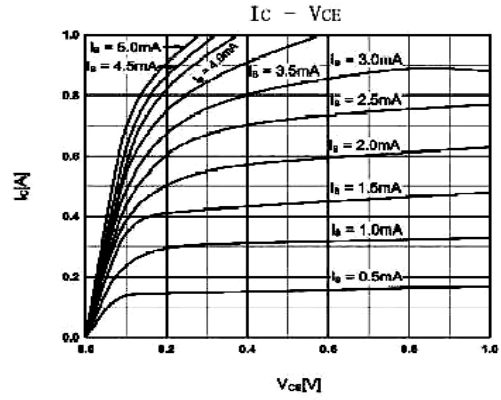
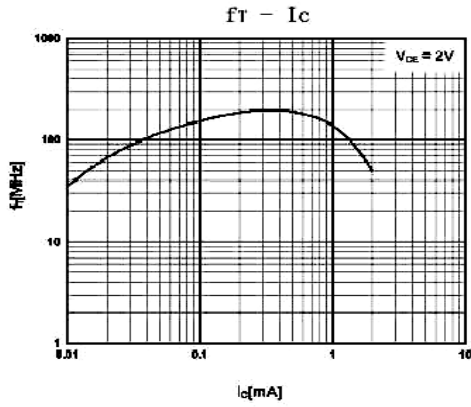


2SD1616U-2SD1616AU

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Characteristics at $T_{amb}=25^{\circ}C$

Parameter	Symbol	Min.	Typ.	Max.	Unit	
DC Current Gain ²⁾ at $V_{CE}=2V, I_C=100mA$	R O Y	h_{FE}	135	-	270	-
		h_{FE}	200	-	400	-
		h_{FE}	300	-	600	-
		h_{FE}	81	-	-	-
at $V_{CE}=2V, I_C=1A$						
Base Emitter Voltage ²⁾ at $V_{CE}=2V, I_C=50mA$	V_{BE}	600		700	mV	
Collector Cutoff Current at $V_{CB}=60V/120V$	I_{CBO}	-	-	100	nA	
Emitter Cutoff Current at $V_{EB}=6V$	I_{EBO}	-	-	100	nA	
Collector Saturation Voltage ²⁾ at $I_C=1A, I_B=50mA$	$V_{CE(sat)}$	-	0.15	0.3	V	
Base Saturation Voltage ²⁾ at $I_C=1A, I_B=50mA$	$V_{BE(sat)}$	-	0.9	1.2	V	
Gain Bandwidth Product at $V_{CE}=2V, I_C=-100mA$	f_T	100	160	-	MHz	
Output Capacitance at $V_{CB}=10V, f=1MHz$	C_{OB}	-	19	-	pF	
Turn-on Time	at $V_{CC}=10V, I_C=-100mA$ $I_{B1}=-I_{B2}=10mA$ $V_{BE(off)}=-2\text{ to }3V$	t_{on}	-	0.07	-	μs
Storage Time		t_{stg}	-	0.95	-	μs
Fall Time		t_f	-	0.07	-	μs
2) Pulsed $PW \leq 350\mu s$, Duty Cycle $\leq 2\%$						





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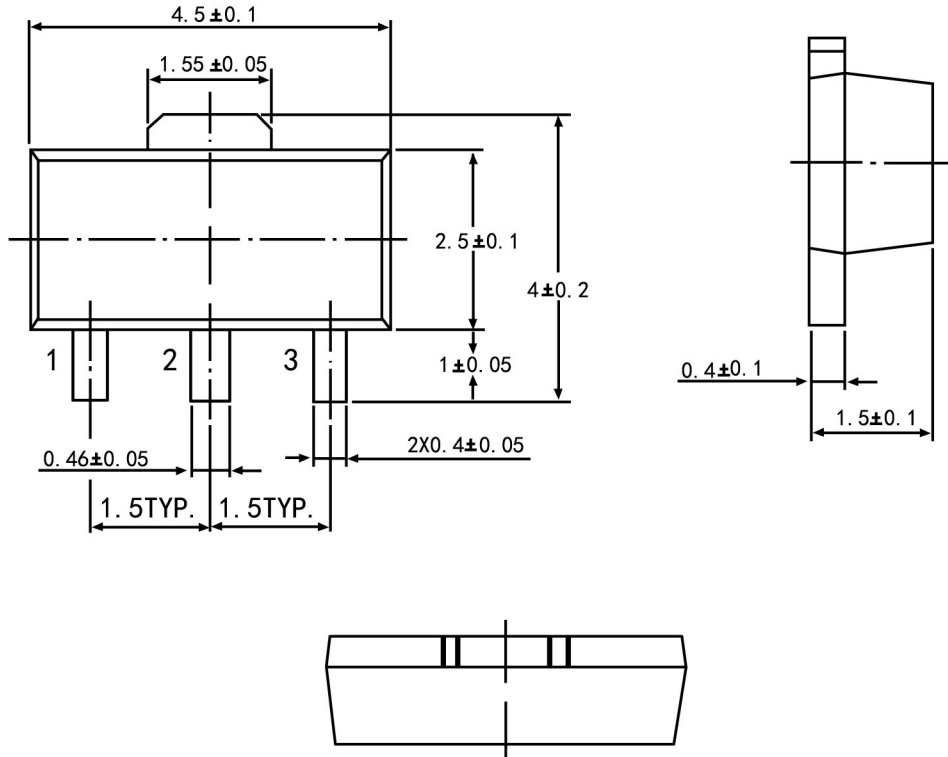
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SOT-89 PACKAGE OUTLINE



Symbol	Dimension in Millimeters	
	Min	Max
A	1.40	1.60
B	0.44	0.62
B1	0.35	0.54
C	0.35	0.44
D	4.40	4.60
D1	1.62	1.83
E	2.29	2.60
e	1.50 Typ	
H	3.94	4.25
H1	2.63	2.93
L	0.89	1.20
All Dimensions In mm		